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        Ruezinsky, Diane
        Bennett, Kristen
        Jander, Georg

<120>   Production of Increased Oil and Protein in Plants by the
        Disruption of the Phenylpropanoid Pathway

<130>   REN-01-024

<150>   60/427,313
<151>   2002-11-18

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                              Page 12

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tctgtttccc tgtatgtgca aacgaaaatt ggggatactt tagatttgaa aacaaaacac     1260

agttgtattg ttgtttcttt ttattgttga aactaatgct aaccccttgg taatttctgg     1320

ctttgggacg aaagtagttt tgattagggt ttagggcgta aaactagcct tagtttgttt     1380

ctgctaagtt agtctgcaag tattttaaag aaattttccg tcacatcaat attggcttca     1440

atgtcgaggt ttttggatta tctgtggctg cattgtgaag gattgaggcg aaactgcgac     1500

tgatattttg cagtttcgcc gcaattgcgg gaaattgtgg acaaatatgg ctttagagag     1560

tctaaaacct tgatattgtt gtttgtcgca ttcttgttta ctaggaaatg gaatgacctt     1620

gtatgtaaat gtttttgctt cggttttgtc catgtttcct atgtgactct ttaactcaaa     1680

gaaattcact tatgatgcac cacaactgtc cacaagattc gtgttgtgtt tgatgctgtc     1740

taaaaccttg atgttgtttg gcgcattctt gtttgtcgca tttgttgcat tcttgtttaa     1800

taggaaatag cctttgtatg taaatgttgt gacttttgtc catgtttcca ctgtgcctca     1860

ttaactcaaa gaaattcact tatgatgtgc cacaagggtt gtgttgtgtg tttgacattg     1920

actatttgtg gtttggattt tgatggtttt tgcctgagct gtccggtgat tgaatgttat     1980

ggtgcagatc cattgtggct gactccacct agtgggaaaa ggtttggttc ttgttggtgt     2040

ttgttgctta agctgttttg tgttggtttg tctggatgat ggatgcactt gtgtgtgtgt     2100

gtggatgctc tgatatctta attgtttaat cttttggggg gggggggctg attacgagaa     2160

agctgatcca agagtggtgt cattggagta c                                    2191
```

<210> 18
<211> 553
<212> DNA
<213> Glycine max

<400> 18

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caccctgaca cccctttgct ccgcttggct tggaacaaac aggacctgag gtacatggcc      60

accattttaa tggacagtaa taaagttgtg attttggata ttaggtctcc cactacccct     120

gttgcggagt tagagaggca ccgtgggagt gtgaacgcca ttgcttgggc tcctcatagc     180

tccacgcata tttgttctgc tggtgatgat actcaggctc ttatttggga attgcccacg     240

cttgcttctc ccactgggat tgatcccgtc tgcatgtact ctgctggctg tgaaattaac     300

cagctgcagt ggtccgccgc ccagcccgat tggattgcca ttgcttttgc caacaagatg     360

cagcttttga aggtttgagg tcagaacaaa caattacaca ttctagccac ttcattgtgg     420

catagacata gcaacttctg atcacttgag tgactgagtt atatatatta ttgtagttgt     480

gcaaactagt ttgccctcct catgtttttac ttgtggcgaa attaacgatg ttcaatttgt     540

ctgttaaaga tgg                                                        553
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<210> 19
<211> 550
<212> DNA
<213> Glycine max

<220>
<221> misc_feature
<222> (541)..(541)
<223> n = unknown

<400> 19

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catctgggac atcgaacgca ccctcgtcga aacccaactc atcgctcacg acaaggaggt      60

ttacgacatc gcctggggag aggccagagt cttcgcctcc gtctccgccg acggctccgt     120

tagaatcttc gaccttcgcg acaaggagca ctccaccatc atctacgaga gcccccaccc     180

tgacacccct ttgctccgct tggcttggaa caaacaggac ctgaggtaca tggccaccat     240

tttaatggac agtaataaag ttgtgatttt ggatattagg tctcccacta cccctgttgc     300

ggagttagag aggcaccgtg ggagtgtgaa cgccattgct tgggctcctc atagctccac     360

gcatatttgt tctgctggtg atgatactca ggctcttatt tgggaattgc ccacgcttgc     420

ttctcccact gggattgatc ccgtctgcat gtacctctgc tgctgtgaaa ttaaccagct     480

gcagtggtcc gccgcccagc ccgattggat tgccattgct tttgccaaca agatgcagct     540

ntttgaggtt                                                            550
```

<210> 20
<211> 519
<212> DNA
<213> Glycine max

<400> 20

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tggggagagg ccagagtctt cgcctccgtc tccgccgacg gctccgttag aatcttcgac      60

cttcgcgaca aggagcactc caccatcatc tacgagagcc cccaccctga cacccctttg     120

ctccgcttgg cttggaacaa acaggacctg aggtacatgg ccaccatttt aatggacagt     180
```

```
aataaagttg tgattttgga tattaggtct cccactaccc ctgttgcgga gttagagagg      240

caccgtggga gtgtgaacgc cattgcttgg gctcctcata gctccacgca tatttgttct      300

gctggtgatg atactcaggc tcttatttgg gaattgccca cgcttgcttc tcccactggg      360

attgatcccg tctgcatgta ctctgctggc tgtgaaatta accagctgca gtggtccgcc      420

gcccagcccg attggattgc cattgctttt gccaacaaga tgcagctttt gaaggtttga      480

ggtcagaaca aacaattaca cattctagcc acttcattg                            519
```

```
<210>    21
<211>    498
<212>    DNA
<213>    Glycine max

<400>    21
cttccttcct ctgaaacaag aaccaaaatg gagaattcga ccgaagaatc ccatctccga       60

tcggaaaact ccgtcactta cgagtcccct accctatct acggcatgtc attctccccc      120

tcccacccc accgcctcgc cctcggcagc ttcatcgaag aatacaacaa ccgcgtcgac      180

atcctctctt tccaccctga cacccttcg gtaactcccc acccttctct ctccttcgac      240

cacccttacc ctcccaggaa actcatgttc cacccccgca aaccctcccc ttcctcttcc      300

tccgacctcc tcgccacctc cggcgactac ctccgcctct gggagatccg tgataactcc      360

gtggatgccg tctccctctt caacaacagc aagaccagcg agttctgcgc ccccttaacc      420

tctttcgact gggacgacat cgaccccaac cgcatcgcca cctccaggat cgacaccacc      480

tgcaccatct gggacatc                                                    498
```

```
<210>    22
<211>    492
<212>    DNA
<213>    Glycine max

<400>    22
gacacccttt cggtaactcc ccacccttct ctctccttcg accacccctta ccctcccacc       60

aaactcatgt tccacccccg caaaccctcc ccttcctctt cctccgacct cctcgccacc      120

tccggcgact acctccgcct ctgggagatc cgtgataact ccgtggatgc cgtctccctc      180

ttcaacaaca gcaagaccag cgagttctgc gccccctaa cctctttcga ctggaacgac      240

atcgacccca accgcatcgc cacctccagc atcgacacca cctgcaccat ctgggacatc      300

gaacgcaccc tcgtcgaaac ccaactcatc gctcacgaca aggaggttta cgacatcgcc      360

tggggagagg ccagagtctt cgcctccgtc tccgccgacg gctccgttag aatcttcgac      420

cttcgcgaca aggaacactc caccatcatc tacgagagcc cccaccctga cccccctttg      480

ctccggcttg gt                                                          492
```

```
<210>    23
<211>    553
<212>    DNA
<213>    Glycine max
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<400> 23

tccagaacga	acaaaaatgg	agaattcgac	ccaagaatcc	cacctccgat	ccgaaaactc	60
cgtgagctac	gaatccccct	acccaatcta	cggcatgtcg	ttctcccctt	cccacccca	120
ccgcctggcc	ctcggcagct	tcattgaaga	atacaccaac	cgcgttgaca	tcctctcctt	180
ccaccccgac	accctctccc	tcacccccaa	cccttctctc	tcctttgacc	acccttaccc	240
tcccaccaaa	ctcatgttcc	acccccgcaa	accccctcc	tcctcctccg	acctcctcgc	300
cacctccggc	gactacctcc	gcctctggga	ggtccgcgac	aactccgtgg	aggccgtctc	360
ccttttcaac	aacagcaaga	ccagcgagtt	ctgcgccccc	ttaacctcct	tcgactggaa	420
cgatatcgac	cccaaccgca	tcgccacctc	cagcatcgac	accacctgca	ccatctggga	480
catcgaacgc	accctcgtcg	aaacccaact	catcgcgcac	gacaaagagg	tctacgacat	540
cgcatgggga	gag					553

<210> 24
<211> 582
<212> DNA
<213> Glycine max

<400> 24

gccttttcaa	caacagcaag	accagcgagt	tctgcgcccc	cttaacctcc	ttcgactgga	60
acgatatcga	ccccaaccgc	atcgccacct	ccagcatcga	caccacctgc	accatctggg	120
acatcgaacg	caccctcgtc	gaaacccaac	tcatcgcgca	cgacaaagag	gtctacgaca	180
tcgcatgggg	agaggccaga	gtcttcgcct	ccgtctccgc	cgacggctcc	gttagaatct	240
tcgacctacg	cgacaaggag	cactccacca	tcatctacga	gagcccccac	cctgacaccc	300
ctctgctccg	tttggcttgg	aacaaacagg	acctgaggta	catggctact	attttaatgg	360
acagtaataa	agttgtgatt	ttggatatta	ggtctcccac	tacccctgtt	gcggagttag	420
agaggcacca	aactcatgtt	ccaccctcgc	atacccgcct	actactgctc	cgacctgctc	480
gccacctccg	gcgactacct	ccgcctctgg	gatgtccgcg	acaactccgt	ggaggccgtc	540
ttccttttca	acaacagcag	accagctagt	cttgcgcccc	tt		582

<210> 25
<211> 378
<212> DNA
<213> Glycine max

<400> 25

ggtctcccac	tacccctgtt	gcggagttag	agaggcaccg	tgggagtgtg	aacgccattg	60
cttgggctcc	tcatagctcc	acgcatattt	gttctgctgg	tgatgatact	caggctctta	120
tttgggaatt	gcccacgctt	gcttctccca	ctgggattga	tcccgtctgc	atgtactctg	180
ctggctgtga	aattaaccag	ctgcagtggt	ccgccgccca	gcccgattgg	attgccattg	240
cttttgccaa	caagatgcag	cttttgaagg	tttgaggtca	gaacaaacaa	ttacacattc	300
tagccacttc	attgtggcat	agacatagca	acttctgatc	acttgagtga	ctgagttata	360
tatattattg	tagttgtg					378

```
<210>  26
<211>  360
<212>  DNA
<213>  Glycine max

<400>  26
acgaggtttg cacaactaca ataatatata taactcagtc actcaagtga tcagaagttg      60

ctatgtctat gccacaatga agtggctaga atgtgtaatt gtttgttctg acctcaaacc     120

ttcaaaagct gcatcttgtt ggcaaaagca atggcaatcc aatcgggctg ggcggcggac     180

cactgcagct ggttaatttc acagccagca gagtacatgc agacgggatc aatcccagtg     240

ggagaagcaa gcgtgggcaa ttcccaaata agagcctgag tatcatcacc agcagaacaa     300

aatatgcgtg gagctatgag gagccccagc aaatgcgttc acacttccac ggtgcctctc     360


<210>  27
<211>  476
<212>  DNA
<213>  Glycine max

<400>  27
cttctccatc cagaacgaac aaaaatggag aattcgaccc aagaatccca cctccgatcc      60

gaaaactccg tgagctacga atccccctac ccaatctacg gcatgtcgtt ctccccttcc     120

cacccccacc gcctggccct cggcagcttc attgaagaat acaccaaccg cgttgacatc     180

ctctccttcc accccgacac cctctccctc acccccaacc cttctctctc ctttgaccac     240

ccttaccctc ccaccaaact catgttccac ccccgcaaac cccccctcctc ctcctccgac     300

ctcctcgcca cctccggcga ctacctccgc ctctgggagg tccgcgacaa ctccgtggag     360

gccgtctccc ttttcaacaa cagcaagacc agcgagttct gcgccccctt aacctccttc     420

gactggaacg atatcgaccc caaccgcatc gccacctcca gcatcgacac cacctg        476


<210>  28
<211>  440
<212>  DNA
<213>  Glycine max

<400>  28
ggaacgaaca aaaatggaga attcgaccca gaatcccac ctccgatccg aaaactccgt      60

gagctacgaa tcccccctacc caatctacgg catgtcgttc tcccccttccc accccccaccg     120

cctggccctc ggcagcttca ttgaagaata caccaaccgc gttgacatcc tctccttcca     180

ccccgacacc ctctccctca cccccaaccc ttctctctcc tttgaccacc cttaccctcc     240

caccaaactc atgttccacc cccgcaaacc ccctcctcc tcctccgacc tcctcgccac     300

ctccggcgac tacctccgcc tctgggaggt ccgcgacaac tccgtggagg ccgtctccct     360

tttcaacaac agcaagacca gcgagttctg cgccccctta acctccttcg actggaacga     420

tatcgacccc aaccgcatcg                                                 440


<210>  29
```

```
<211>   467
<212>   DNA
<213>   Brassica napus

<400>   29
gacaactcag ctccggactt tttacctaaa tcggtaaccg ccgccaccta cgactctccg      60

ggcgggttct acgcgatgtc cggctgctcc tccaccaacc gaatcgccgt cgggagcttc     120

ctcgaggact acaacaaccg catcgacatc ctctccttcg actccggctc catgtccctc     180

aagccccttc catccctctc cttcgagcac ccttaccctc ccaccaagct catgttcagt     240

cccccctccc tccgccgcag cggcggggggc gaccttctct tctcctccgg cgacttcctc    300

cgcctctggg aggtcaacga agactcctcc tccgcggagc cagtatcggt cctcaacaac     360

agcaagacga gcgagttctg cgcgccgctg acctccttcg actggaacga cgtggagccc     420

aagcggttag gcacgtgcag catcgacacc acgtgcacga tcttgga                   467


<210>   30
<211>   469
<212>   DNA
<213>   Brassica napus

<220>
<221>   misc_features
<222>   (208)..(302)
<223>   n = unknown


<220>
<221>   misc_feature
<222>   (208)..(302)
<223>   n = unknown


<400>   30
gacaactcag ctccggactt tttacctaaa tcggtaaccg ccgccaccta cgactctccg      60

ggcgggttct acgcgatgtc cggctgctcc tccaccaacc gaatcgccgt cgggagcttc     120

ctcgaggact acaacaaccg catcgacatc ctctgcttcg actccgactc catgtccctc     180

agccccttcc atcctctcct tcgagcancc cttaccnctg nccaccaaag ctcatgttca     240

gtccccccctc cctccgcccg aacgggcggg gcgacctnct cgccttctnc ggcgacttcc    300

tncgccttct ggaggtcaac gaagactcct cctccgcgga gccagtatcg gtcctcaaca     360

acagcaagac gagcgagttc tgcgcgccgc tgacctcctt cgactggaac gacgtggagc     420

ccaagcggtt aggcacgtgc agcatcgaca ccacgtgcac gatcttgga                 469


<210>   31
<211>   1531
<212>   DNA
<213>   Arabidopsis thaliana

<400>   31
gaaatacacc taacttgttt agtacacaac agcaacatca aactctaata aacccaagtt      60

ggtgtatact ataatggtga tggctggtgc ttcttctttg gatgagatca gacaggctca     120

gagagctgat ggacctgcag gcatcttggc tattggcact gctaaccctg agaaccatgt     180
```

```
gcttcaggcg gagtatcctg actactactt ccgcatcacc aacagtgaac acatgaccga      240

cctcaaggag aagttcaagc gcatgtgcga caagtcgaca attcggaaac gtcacatgca      300

tctgacggag gaattcctca aggaaaaccc acacatgtgt gcttacatgg ctccttctct      360

ggacaccaga caggacatcg tggtggtcga agtccctaag ctaggcaaag aagcggcagt      420

gaaggccatc aaggagtggg gccagcccaa gtcaaagatc actcatgtcg tcttctgcac      480

tacctccggc gtcgacatgc ctggtgctga ctaccagctc accaagcttc ttggtctccg      540

tccttccgtc aagcgtctca tgatgtacca gcaaggttgc ttcgccggcg gtactgtcct      600

ccgtatcgct aaggatctcg ccgagaacaa tcgtggagca cgtgtcctcg ttgtctgctc      660

tgagatcaca gccgttacct tccgtggtcc ctctgacacc caccttgact ccctcgtcgg      720

tcaggctctt ttcagtgatg gcgccgccgc actcattgtg gggtcggacc ctgacacatc      780

tgtcggagag aaacccatct ttgagatggt gtctgccgct cagaccatcc ttccagactc      840

tgatggtgcc atagacggac atttgaggga agttggtctc accttccatc tcctcaagga      900

tgttcccggc ctcatctcca agaacattgt gaagagtcta gacgaagcgt ttaaaccttt      960

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agaccaggtg gagataaagc taggactaaa ggaagagaag atgagggcga cacgtcacgt     1080

gttgagcgag tatggaaaca tgtcgagcgc gtgcgttctc ttcatactag acgagatgag     1140

gaggaagtca gctaaggatg gtgtggccac gacaggagaa gggttggagt ggggtgtctt     1200

gtttggtttc ggaccaggtc tcactgttga gacagtcgtc ttgcacagcg ttcctctcta     1260

aacagaacgc ttgccttcta tctgcctacc tacctacgca aaactttaat cctgtcttat     1320

gttttatata atataatcat tatatgttta cgcaataatt aaggaagaat tcatttgatg     1380

tgatatgtga tatgtgctgg acaggtctat tcgactgttt ttgtactctc tttttttgtgt   1440

cttttacaa tattaaatct atgggtcttg aatgacatca aatctttgtt aaaaaatata     1500

tatatatt cgtttttttt tttttttttt t                                      1531
```

```
<210>    32
<211>    1493
<212>    DNA
<213>    Hordeum vulgare

<400>    32
cgttgctgtc gggaagtcgc tagtgctgct aatggctgcg gtgaggttga aggaagtgag       60

aatggcacag cgggctgagg gcctggcgac agtgctggcc attggcaccg ccgtgccggc      120

caactgcgtg taccaggcga cctacccaga ctattacttc agagtcacga agagcgagca      180

cctcgcggac ctcaaggaga agttccagag gatgtgcgac aagtccatga tcagaaagag      240

gcacatgcac ctaaccgagg agatactaat taagaacccc aagatctgcg cgcacatgga      300

gacctcgctt gacgcgcgcc atgccattgc gctcgtcgag gtcccgaagc tggggcaagg      360

agctgcggag aaggcaatca aggagtgggg ccagccattg tccaagatca cccacctcgt      420
```

```
gttctgcaca acctctggcg tcgacatgcc aggcgccgac taccagctga ccaagttgct    480

cggcctctcc ccgacggtga aacgcctgat gatgtaccag caggggtgct tcggcggcgc    540

cacggttctt cgccttgcca aggacatcgc tgagaacaac cgcggcgctc gtgtgctggt    600

tgtctgctcg gagataaccg ccatggcctt ccgtggtcct tgcaagtccc atctcgactc    660

gctggtcggc catgcactct ttggcgatgg cgcagctgct gccatcatcg gcgctgaccc    720

tgaccagctg gacgagcagc cagtgttcca gctggtgtca gcgagccaga ccatcctgcc    780

ggagtcggag ggagccatcg acggccacct tacggaggcg ggcctgacca tccaccttct    840

caaggacgtg ccgggactca tctctgagaa tatcgagcaa gcattagagg acgcgtttga    900

gcctctgggc atccacaact ggaactccat cttctggatt gctcaccctg ggggggcctgc    960

catccttgac agggtcgagg acagagttgg ccttgacaag aagcgcatgc gcgcaagccg   1020

ggaggttctg tcggagtacg aaacatgtc cagcgcaagt gtactcttcg tccttgacgt   1080

tatgcgtaag agctccgcca aggatggcct cgccacaact ggagaaggca aggactgggg   1140

tgtcctcttc ggcttcggcc ctggcctcac cgtcgagaca ctcgtcctcc acagcgtccc   1200

cgtccccgtc cccaccgccg ctagtgcatg atcgacgcat gccatattta gcttatttgg   1260

gtcaagacaa taaaataagc ggcccacaaa tatgaaccac gtccgacaat acgagcacct   1320

ggctgggggc gctcctgcct gttaaaccat agatgtacgt acctcgtgat ttgtgtctac   1380

agtatattgt aaacgttcac ccatcaaagt tgtattttca tccttaaaaa aaaaaaaaaa   1440

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa           1493
```

```
<210>  33
<211>  1456
<212>  DNA
<213>  Brassica napus

<400>  33
gacccacgcg tcagcccacg cgtccgtcga cccgagacat acataacttg cttactacgc     60

aaagtaacac atcgatcaaa ctttagttaa aacctagttg gtttaatatg gtgatggggc    120

cttcttcgtt ggatgagatc agaaaggcac agagagcaga cggtcctgca ggcatcttgg    180

cgataggtac ggccaaccct gcgaaccatg tgctccaagc tgagtatcca gactactact    240

tccgcatcac caacagtgaa cacatgaccg accttaagga gaagttcaag cgcatgtgcg    300

ataagtcgac cataagaaaa cgccacatgc acttgaccga ggagttcttg aaagagaacc    360

ctaacatgtg cgcctacatg gctccttctc tcgacgctag acaagacctc gtggtggttg    420

aagtccctaa gctaggcaaa gatgcagcag tgaaggccat caaggagtgg ggtcagccta    480

agtcaaagat cacacacgtt gtcttctgca ccacctctgg agttgacatg cctggtgctg    540

actaccagct caccaagctc cttggccttc gcccttccgt gaagcgtctc atgatgtacc    600

agcaaggttg cttcgccggc ggcactgtcc tccgtctcgc caaggacctc gctgagaaca    660

accgtggcgc acgtgtcctc gtggtctgct ccgagatcac agccgtcacc ttccgtggcc    720

cctctgacac ccaccttgac tcactcgtgg gacaagctct cttcagtgac ggtgcagccg    780
```

```
cgctcattgt cggttcggac cctgatgtct ctgctggaga gaagcccatc ttcgagatgg     840

tgtctgcggc gcagaccatc ctcccagact cggacggtgc catagatgga cacttgaggg     900

aagtgggact caccttccat ctcctcaagg acgtccctgg actcatctcc aagaacattg     960

agaagagtct agacgaagcg tttaaaccct tagggataag tgactggaac tccctcttct    1020

ggatagctca ccctggtggt ccagcgatcc ttgacgacgt tgagaagaag ctaggactca    1080

aggcagagaa gatgagagcc acgcgtcacg tgttgagcga gtatggaaac atgtctagcg    1140

cctgtgtcct ctttatattg gatgagatga ggaggaagtc taaggaagat ggtgtggcca    1200

cgacaggtga agggttagaa tggggtgtct tgtttgggtt cggaccaggt ctcaccgtgg    1260

agacagttgt cttgcacagc gttcctctct aaacagaaag ctctcttcct ataaatgcct    1320

acctaccttt cacatactta ccatcatatc atgtctttat gttttttttt ttcaatttaa    1380

gataatattt gtaatgcaat aattaaaaaa aaaaaattca ttagtgtgac aaaaaaaaaa    1440

aaaaagggc ggccgc                                                     1456
```

```
<210>  34
<211>  1357
<212>  DNA
<213>  Brassica napus

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<213> Gossypium hirsutum

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acatcccggt ggtcccgcga tcctcgatca agtcgaggag aagctccggc tcaagccgga    1140

gaaactccag tccacccggc atgtgctgag tgagtacgga aacatgtcaa gcgcgtgtgt    1200

tttgttcatt ctggatgaaa tgaggaagaa gtctaaggag gaagggaaga gtaccactgg    1260
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agagtgatca ataaggaacc ctcggaaata ccagggaaag tttgttatta ttactagttt    1440

cacttgtgga tttatcgtag cataatgttg tacaagaata atttaatatg aacaagatcg    1500

tgtgtttgtt attgattttt tcaaagttat atagtccgta cttattcggc attgcatttc    1560

gtttaaacag gacagagcgg ctctagatct acagagtctc acgcatgcgt gcatgtgaag    1620

tc                                                                   1622
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<210> 66
<211> 1634
<212> DNA
<213> Glycine max

<400> 66
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gcattggtat ctgaaatcag gaaagatggt tagcgtagct gagatcaggc aggcacaaag     180

ggcagaaggc ccagcaacca tccttgccat tggaactgca aacccaccaa accgtgttga     240

tcagagcacc tatcctgatt actacttcag aatcaccaac agtgaccaca tgaccgagct     300

caaagagaaa tttcagcgca tgtgtgacaa gtctatgatc aagacgagat atatgtacct     360

aaacgaagag atcttgaaag agaatccaaa catgtgtgct tacatggcac cttcttttgga    420

tgctaggcaa gacatggtgg tggtagaggt accaaagcta gggaagagg ctgcagtaaa      480

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gatcactgca gtcacattcc gtgggccaag tgacactcac cttgatagtc ttgtgggcca     780

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atctgctgaa aatggacata aaccacagg tgaaggactt gaatggggtg tgttgttcgg     1260

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ctcatatatt atttcattat tgtgtaccac ttttcaaact tgcttggggt ttgtaacaac    1380
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taataatacg tgtttggtgg cttttttagcc taattatcaa taacaggcat ttgttttttaa   1500

agtttgtaat tgtgtacgtt tatattcaaa taataataca tgttcgatgg ccttttagcc   1560

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<210> 67
<211> 1517
<212> DNA
<213> Glycine max

<400> 67
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gcacaccttc atttcaacct ctctgatttt gtaattgagt tcgatcaaat agctcccagt   180

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acccaccaaa ctgtgttgat cagagcacct atcctgacta ctacttcaga atcaccaaca   360

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tgtaacaaca acaaccacca aaaaaaaaaa aactcgttta gagtttgttt gtgtacgttt  1440

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<211>  540
<212>  DNA
<213>  Glycine max

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tctcgtcttg atcttgaaag agaatccaaa catgtgtgct tacatggcac cttctttgga     180

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tttggccaag gatttggctg agaacaacaa gggtgcacgt gtgcttgttg tctgctctga     480

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<211>  1823
<212>  DNA
<213>  Glycine max

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catgaaagaa tgaataagaa agaaaaggac ttggtcttgc acaagatata tggattagac     180

agtgacactg cggagcacaa cagtctcaac ggtgagtcca gggccgaaac caaatagcac     240

accccagtca aggccttcac cggttgtgcc aagtccattt tctattgatt tcttcctcat     300

ttgatccaag atgaatagca cacatgcact tgacatgtta ccatactcgc tgagcacatg     360

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tgggaaggct tcaaccaagg ccttctcaat attcttggag atgagtccag gaacatcctt     540

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aagcacgcga gcacccttgt tgttttcggc gaggtctttg gccaaacgaa gcaccgtgcc     840

accggcaaag cagccttgtt ggtacatcat gtaacgcttg acggagggac gaaggcccag     900

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tgctcgctgt tggtgatgcg gaaataatag tcaggatagg tactctgatc cacgcagttg   1380

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cgtagactga tgactactct cttattttaa caacccaata tttttggttt tttgtttatt   1740

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gtcaatggtg aaggtcatag agg                                           1823
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<212>    DNA
<213>    Glycine max

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ttcaaaccgg ccagccaaga atacatatga aaaagaaag atttgttctc ttgctcaata     180

tatatgatca gagagtgaca ctgcggagca caacagtctc aacggtgagt ccagggccga    240

aaccaaatag cacaccccag tcaagacctt caccggttgt gccaagtcca ttttctattg    300

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cgctgagcac atgtctagta gcttccattt tttcaggctt caggcctaac ttagcctcaa    420

cttggtccaa aattgcgggt ccaccagggt gtgcaatcca gaagatagaa ttgtaatcgg    480

agattcccaa gggttggaag gcttcaacca aggccttctc aatattcttg gagatgagtc    540

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ccccttcact gtctggaagg attgtctggg cagtccagac aagctgaaac aaaggctttt    660

caactggtaa ggggtctgat ccaacaatga cagcggctgc accatctcca acaaggctt     720

gacccacaag gctatcaaga tgggtgtcag ttgggccgcg aaatgtgact gcggtgatct    780

cagaacaaac gacaagcacg cgagcaccct tgttgttttc agcgaggtct ttggccaaac    840

gaagcaccgt gccaccggca aagcagcctt gttggtacat catgtaacgc ttgacggagg    900

ggcgaaggcc taatagttta gtgagccgat aatcagcacc aggcatgtcg acaccactag    960

tggtgcaaaa gatgagatgg gtaatcttgg acttgggttg accccattcc ttgattgcct   1020
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ataaatgtta ccttattaat tattatatct gatttctttt ctggatgata acaaatatga    1680

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<211> 1592
<212> DNA
<213> Glycine max

<400> 71
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tcttatttac ttgtataaaa aaagaagcat atgagaaaga cgggaaaaaa agcaaaagga     180

gaaagaatac atttttcaaa cagacgtgtc agacataaga aaggatatga ttagactgtg     240

acactgcgaa gcacaacagt ctcaacagtg agtccagggc caaaaccaaa tagcacaccc     300

cattcaagcc cttcaccagt ggtgccaagt ccattttcta ttgacttctt cctcatttga     360

tccaagatga caacacgca tgcacttgac atgttaccat actcgctgag cacatgtcta     420

gtagcttcca tttttttcagg tttcaagcct aacttagcct caacttggtc caatattgct     480

ggtccaccag ggtgtgcaat ccaaaagata gagttgtaat catcaattcc caagggttgg     540

aaggcttcaa ccaaggcctt ttggatgttc ttcgagatga gtccaggaac atccttgagg     600

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aggattgttt gtgcagtcca cacaagctca aacaaaggct tttcagcagg caaagggtct     720

gatccaacaa tgacagcagc tgcaccatct ccaaacaagg cttgcccaac aaggctatca     780

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caaatcaaag gaatatgttg aaaataagca atatacatat tgtataaaga aatgaagaaa    1320

ggagagagat atatatctta cacatgcgct tgaatttttc tttgagctcg gtcatgtgct    1380

cgctgttggt gatgcggaaa taatagtcag gataggtact ctgatcgaca cagtttggag    1440

gagttgcggt gccaatagcc atgacagtgg cagggccctc tgcacgttgt gcattacgga    1500

tctcttcaac actgaccatc ctagctagtt aattttctga agcaaagaat gaaagtgtag    1560

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<211>  1310
<212>  DNA
<213>  Glycine max

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<400>  72
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acactcgtta cacaattgac ccataaataa acctggttcc agacagttct atagttcaat    180

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ggaatacatt tttcaaacag aacttacaag acatgagaaa gaatataatt agacagtgac       180

actgcgtagc acaacagtct caacagtgag tccagggcca aaaccaaata acacacccca       240

ttcaagtcct tcaccagttg tgccaagtcc attttctatt gacttcttcc tcatttgatc       300

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aacactcacc attttcctaa ttttcaatct ctgcaaccaa caactaagct tctttgaacc      1380

caagaattaa tgaaactcaa gtagtagtag ctacgaaaga aaggctatga tatgaatgat      1440

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<211>  669
<212>  DNA
<213>  Glycine max
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<400> 74
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gaaagaatac atttttcaaa ctcaacatga aagaatgaat aagaaagaaa aggacttggt    180
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gtccatcaat agccccttca ctgtctggaa ggattgtctg ggcagtccag acaagctgaa    660
acaatacaa                                                           669
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<210> 75
<211> 912
<212> DNA
<213> Glycine max

<400> 75
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ttacacaaac cacataattc caaacagttc tacagtccaa tttatacaca atcacgaaga    180
atcttttgtt ggagatgaaa ttggtaaaaa taaaatagaa gatattcact ttgcaactgt    240
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agtgtttact ggtatacaaa aaagaagaat gtgagaaagc aaaagagaaa gaatacattt    360
ttcaaactaa aaaagcaata atacataaga agaaagaag gatctgtgtt cttgctcaat    420
atatatgatt agacagtgac actgcggagt acaacagtct caacagtgag tccaggaccg    480
aaaccaaata gcacacccca gtcaaggcct cgccggttg tgccaagtcc attttctatt    540
gatttcttcc gcatttgatc caagatgaat agcacacatg cacttgacat gttaccatac    600
tcgctgagca catgcctagt agcttccatt ttttcaggct tcaagcctaa cttagcctcc    660
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gagattccca agggttggaa ggcttcaacc aaggccttct caatattctt ggagatgagt    780
ccaggaacat ccttgaggag atggaaagtg agaccaactt cgcgaaggtg tccatcaata    840
gcccttcac tgtctggaag gattgtctgg gcagtccaga caagctgaaa caaaggcttt    900
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<210> 76
<211> 753

<212> DNA
<213> Glycine max

<400> 76
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tttttcaaac tgaacagcaa agaatacata agaaagagaa agatttgct gtcttaagaa   180

aatactatta ctgattagac actgactcaa ttactgatta gacagtgaca ctgcggagca   240

caacagtctc aacggtgagt ccagggccga aaccaaatag cacaccccag tcaaggcctt   300

caccggttgt gccaagtcca ttttctattg atttcttcct catttgatcc aagatgaata   360

gcacacatgc acttgacatg ttaccatact cgctgagcac atgtctagta gcttccattt   420

tttcaggctt caagcctaac ttagcctcaa cttggtccaa aattgcgggt ccaccagggt   480

gtgcaatcca gaagatagaa ttgtaatcgg agattcccaa gggttggaag cttcaacca   540

aggccttctc aatattctta gagatgagtc caggaacatc cttgaggaga tggaaagtga   600

gtccaacttc gcgaaggtgg ccatcaatag ccccttcact gtctggaagg attgtttggg   660

cagtccagat aagctgaaac aaaggctttt caactggtaa ggggtctgat ccaacaatga   720

cagcggctgc accatctcca aacaaggcta aac   753

<210> 77
<211> 805
<212> DNA
<213> Glycine max

<400> 77
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atgaccgagc tcaaagagaa atttcagcgc atgtgtatgt actgccatac tctcatctta   180

attttttccat atttctcact tctacaaaat tgttttttcta catccgtttt aatttataca   240

aataacactt gttaatttgg cacatcttaa ttctgtcttc tcgttacatt atattatcta   300

tcacgtcgat ctgcgaatca ttcttgaaat aaataaataa ataaatctaa ttgggtgcaa   360

atattaaaat ggcatcaagg tttttataag ttacttagtc taaatagtta aaaattaaat   420

tgataggttt ttgcatttca atagtagcta gtcattatgt atagttagag attattagtc   480

ttttaactct cccttttcaaa aaaaaaaaa aaagaggtga taattcgtta tggtgtttgt   540

tgtcttgatt atacaatata gatcgttgac attattattt ctttatgact aattttcagg   600

tgacaagtct atgatcaaga cgagatatat gtacctaaac gaagagatct tgaaagagaa   660

tccaaacatg tgtgcttaca tggcaccttc tttggatgct aggcaagaca tggtggtggt   720

agaggtacca aagctaggga aagaggctgc agtaaaggcc ataaggagt ggggccagcc   780

aaagtcaaag attacccact tgatc   805

<210> 78
<211> 540

<212> DNA
<213> Glycine max

<400> 78
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ggctattggc accgccactc ctcccaactg cgggtgtcaa agatcctctc ctggctgtta     180

cgttcacatg agcttctgcg ggcacataaa caggctgatc cattccttat ctctcatgag     240

gcattgcccg tacatttacc ttcgatacac gtgcttaaac gggcagatcc tgcaagagaa     300

tccgagtgtt tgcgcttaca tggcaccttc gatggatgca aggcaagaca tggtggttgt     360

ggcggtacca aagttgggaa aagaggctgc aactcacgca atcatggaat ggggtcaacc     420

ccagtccaag attacccatc tgatcttctg caccactagt ggtgtcgaca tgcctggtgc     480

tgattatcag ctcactaaac tattaggcct tcgcccctac gtcaagcgtt acatgatgta     540
```

<210> 79
<211> 1310
<212> DNA
<213> Brassica napus

<400> 79
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ctcgaggact acaacaaccg catcgacatc ctctccttcg actccgactc catgtccctc     180

aagccccttc catccctctc cttcgagcac ccttaccctc ccaccaagct catgttcagt     240

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aagcggttag gcacgtgcag catcgacacc acgtgcacga tctgggacgt ggagaggtcc     480

gtggtggaga cgcagctcat cgcgcacgac aaggaggtcc acgacatcgc gtggggggag     540

gctagggttt tcgcctcggt ctccgccgac ggatcggtga ggatcttcga tctgcgcgac     600

aaggagcact ccaccatcat ctacgagagc ccccagcccg atacgccgct cctgaggctc     660

gcgtggaaca agcaggactt gcggtgtatg gccacgattc tgatggattc gaataaggtt     720

gtcattctcg acattcgatc gccgacgatg ccggtcgccg agcttgaaag gcaccagggg     780

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gacgcgcagg ctcttatctg ggagttgccg acgatggctg gccgaatgg gattgatccc     900

atgtcggttt actcggccgg ttcggagatt aaccagttgc agtggtcggc ttctctgcct     960

gattggattg gcattgcgtt tgctaacaaa atgcagctcc tcagagtttg agatgcaggt    1020

ggggaagtga tcaaaaatca gagatagcat agaccgtgt aaccagtgcg taagcttagt    1080

agggtttggt tggtgcaaag cacattctgg tttctttgat tcgcaatgcc tctatgcatc    1140

tatgtgatcg taactaagac tttattcgct tggtgtacca aatgctctac tattttatta    1200
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<210>    80
<211>    584
<212>    DNA
<213>    Glycine max

<400>    80
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atctctgatt acaactccat cttttggatt gcacaccccg gtgggcctgc tattcttgac    180

caagttgagc aaaagttagg tctcaaacct gagaagatga aggccactag agatgtgctt    240

agtgaatatg ggaacatgtc aagtgcttgt gttctttttca tcttggatga gatgaggagg    300

aaatctgctg aaaatggact taaaaccaca ggtgaaggac ttgaatgggg tgtgttgttc    360

ggttttggac ctggacttac cattgaaact gttgttctgc gcagtgtggc catctgagat    420

gcctaatata ttatttcatt attgtgtacc acttttcaaa cttgctggag tttgtaacaa    480

caacaacaac aaaaaaaaaa aaactcgttt agagtttgta attgtgtacg tttatattca    540

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<210>    81
<211>    1527
<212>    DNA
<213>    Glycine max

<400>    81
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ggaggaggca aagctgtggc cacagtccta gccattggca cagcaaatcc acccaatttc    180

atccttcagg aggattatcc tgacttctac tttcgggtca ccaatagcga ccatttgcac    240

cgcttgaagc aaaagttcaa gcgcatttgc gagaattcaa agatagaaaa gcgacacata    300

gtccacacgg aagaatacct aaagcagaac tcagacagcg gcacgtacga tggccttccc    360

ttggagacac gacagaatgt ccccacggaa caggtaataa aattaggtat ggaagcagca    420

tcaaaggcca ttaaggaatg gggcgaaccc ttatcagaaa tcacacacct catcttctac    480

accacttctt gcttcggctc cgttcccggt cctgaccact acctctccaa acaacttgga    540

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tgttccgaga ccatgtttgc ctcgtttcgc gctcctagcg aatccaacgt tgaggttctc    720

gtaggacagg ctctgttcgg agacggtgcc gccgccgtca tcattggcgc ggatcctaag    780

cactccatcg agcatccact cttcgaactc gtgttggctt ctcaaaccac tgtgcctgac    840

accgagaatg cgatcaaagg aagtcaacaa gagaataggt tggtttatta tttggataag    900
```
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gacattccca atattgtaac taacaatgtg aagaagtgtt tggttgatga gttgggtgaa    960
gttggtttcg tcgacgaaat tgattggaac aagttttct atgcaattca tccgggtggg   1020
gctgttattg tgagtggggt tgaagagaag ctagggttag agaaagagaa gctgagtgcg   1080
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tgggggattt tattagggtt tggtcctggt gtggcaatgg aaactgtgct tttacgtagt   1260
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<210> 82
<211> 1421
<212> DNA
<213> Lycopersicon esculentum

<400> 82
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aagggcgcat cgtgcaaagg gaccagctac tatcatggcc ataggcacgg cgactccttc    180
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agcagcccaa aaggccatta agaatggggg tcagcccaag tccaagatca cccatgtggt    480
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tgtttgctca gagatcactg cagttacttt tcgtggtcca agtgatactc atttggatag    720
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gcaagtttta agtgactatg gaaatatgtc tagtgcttgt gttctattta ttttagatga   1140
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aatgagaaag gcctcatcca aagaagggct tagtaccaca ggtgaaggcc ttgattgggg    1200

tgtacttttt ggatttgggc ctgggcttac tgttgagact gttgtgctcc atagtgtgtc    1260

tacttagtat ataatattac taaaggggt tataagttaa atagattatc tatgtaatct     1320

tatattatat ttcttatatt tggtgtatca tgtatttatt ttgttttcaa ttgaaaaaaa    1380

aaaaaaaaaa actcgataag aaaaagttca ttttcccttt g                       1421
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<210>  83
<211>  1416
<212>  DNA
<213>  Lycopersicon esculentum

<400>  83
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aaaaacctag catatccacc attttttccg gcgaaaatgg tcaccgtgga ggagtatcgt     120

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aagactgagc tgaaagagaa atttaagcgc atgtgtgata aatcaatgat taagaagaga     300

tatatgcact taaccgaaga aatcttgaaa gagaaccccta acatgtgtgc atacatggca     360

ccttcccttg atgcaaggca agacatagtt gttgttgaag tgcctaaact tggaaaaaga     420

ggcagcccaa aaggccatca aagaatgggg ccagcccaaa tccaagatta cccatttggt     480

cttttgtacc actagtggtg tggacatgcc cgcgtgtgac taccaactcg ctaagctcct     540

accccttcgc ccatcagtca agcgactcat gatgtaccaa caaggttgct ttgccggggg     600

aacagtactt cggctagcca aggacttggc tgagaacaac aagggtgcta gagtccttgt     660

tgtttgctct gagatcactg cagttacgtt ccgtggaccc agtgaatctc acttagatag     720

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acctctaggt atatctgact ggaactctct attttggatc gctcaccctg gcgggcctgc    1020

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tgcttagtgg gctgggctta cattgtgggc ctctaaaatt tcttggttat taatgtgttt    1320

gctatatttt gttgtttaat gtttatgttg tctttttca aataaagata tttataatga    1380

gaactatacc taaaaaaaaa aaaaaaaaa actcga                               1416
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<210>  84
<211>  685
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<212>  DNA
<213>  Triticum aestivum

<400>  84
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ctgcttccct ctgcgtcccg caaacttaga cttcacacag ccggccactg gtgcgacaac     120

tactagctcg tcggccgctg gtacgtacgt agatcccatc gatggcggcc accatgaccg     180

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tcaccaagat gctcggcctg cgcccgtccg tgaagcgcct catgatgtac cagcagggct     660

gcttcgccgg cggcacggtg ctccg                                           685


<210>  85
<211>  929
<212>  DNA
<213>  Triticum aestivum

<220>
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<222>  (3)..(39)
<223>  n = unknown

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taaggccata aaggaatggg gccagccact gtccaagatc acgcacctcg tcttctgcac     240

cacctccggc gtagacatgc cgggtgccga ctatcagcta accaagatgc tcggactcca     300

cccgtccgtg aggcgcgtca tgctgtacca gcaaggctgc tttgctggcg gcacggtgct     360

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tgttgaaagg ccactgttcc aacttgtctc ggcgagccag acaatactgc cggacacgga     600

tggcttcatc aagggccacc tccgggaggg tgggctcacc ttccacctcc acaaggatgt     660

gcctgtagcc atctcaaaaa acatccaaca agcgctagag gacgccttcg ctccactcgg     720

catcgatgac tggaactcca tcttttgggt ggctcaccct ggtggtccgg ccatccttga     780

catggtggag gcagaggcca agctggacaa aaggcggatg cgtgccacca ggcacatcct     840
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atccgagtac ggcaacatgt ccagcgcttg tgtgctcttc atcctcgacg agatgcgtaa    900

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```

```
<210>  86
<211>  469
<212>  DNA
<213>  Triticum aestivum

<220>
<221>  misc_feature
<222>  (400)..(414)
<223>  n = unknown
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<400>  86
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agagagcaga cggtcctgca ggcatcttag cgataggtac ggccaaccct gcgaaccatg    180

tgctccaagc tgagtatcca gactactact tccgcatcac caacagtgaa cacatgaccg    240

accttaagga gaagttcaag cgcatgtgcg ataagtcgac cataagaaaa cgccacatgc    300

acttgaccga ggagttcttg aaagagaacc ctaacatgtg cgcctacatg gctccttctc    360

tcgacgctag acaagacctc gtggtggttg aagtccctan nctaggtaaa gatngcagca    420

gtgaaggcca tcaaggagtg gggtcagctt aagtcaaaga tcacacacg               469
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<210>  87
<211>  563
<212>  DNA
<213>  Triticum aestivum

<220>
<221>  misc_feature
<222>  (13)..(18)
<223>  n = unknown
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cccggccaac tgcgtgtacc aggccaccta cccggactac tatttcagag tcaccaagag    180

cgagcacctc ccggacctca aggagaagtt cgagaggatg tgcgagaagt ccacgatcag    240

gaagaggcac atgcacctca ccgaagagat cctgacaaag aaccctagca tctgctccca    300

catggagccg tcgctggaca cgcgccacga cattgtcgtc gtggaggtgc ccaaacttcg    360

gaaagaggcg gcagagaggg ccatcaagga gtggggccag ccgcagtcaa agatcaccca    420

cgttgtcttc tgcaccacct ccggcgtgga catgccaggt gccgactacc agttgacgag    480

gctgctcggc ctctcgccga cggtcaaacg cctcatgatg taccagcaag ctgctttgg    540

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<211>   483
<212>   DNA
<213>   Triticum aestivum

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ctactagctc gtcggccgct ggtacgtacg tagatcccat cgatggcggc caccatgacc     180

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atcacctata tatacgtaag tgtaagaaat gtgaacatgt ggtgtgagag tggttaagtc    1800

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<213>   Helianthus annuus

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<213> Arabidopsis thaliana

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                              Page 74

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Asn Asp Val Phe Leu Glu Glu Lys Lys Glu Asp Gly Pro Gln Val Pro
            35              40              45

Thr Ile Asp Leu Lys Asn Ile Glu Ser Asp Asp Glu Lys Ile Arg Glu
            50              55              60

Asn Cys Ile Glu Glu Leu Lys Lys Ala Ser Leu Asp Trp Gly Val Met
65              70              75              80

His Leu Ile Asn His Gly Ile Pro Ala Asp Leu Met Glu Arg Val Lys
            85              90              95

Lys Ala Gly Glu Glu Phe Phe Ser Leu Ser Val Glu Glu Lys Glu Lys
            100             105             110

Tyr Ala Asn Asp Gln Ala Thr Gly Lys Ile Gln Gly Tyr Gly Ser Lys
            115             120             125

Leu Ala Asn Asn Ala Ser Gly Gln Leu Glu Trp Glu Asp Tyr Phe Phe
    130             135             140

His Leu Ala Tyr Pro Glu Lys Arg Asp Leu Ser Ile Trp Pro Lys Thr
145             150             155             160

Pro Ser Asp Tyr Ile Glu Ala Thr Ser Glu Tyr Ala Lys Cys Leu Arg
            165             170             175

Leu Leu Ala Thr Lys Val Phe Lys Ala Leu Ser Val Gly Leu Gly Leu
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Glu Pro Asp Arg Leu Glu Lys Glu Val Gly Gly Leu Glu Glu Leu Leu
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Leu Gln Met Lys Ile Asn Tyr Tyr Pro Lys Cys Pro Gln Pro Glu Leu
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Ala Leu Gly Val Glu Ala His Thr Asp Val Ser Ala Leu Thr Phe Ile
225             230             235             240

Leu His Asn Met Val Pro Gly Leu Gln Leu Phe Tyr Glu Gly Lys Trp
            245             250             255

Val Thr Ala Lys Cys Val Pro Asp Ser Ile Val Met His Ile Gly Asp
            260             265             270

Thr Leu Glu Ile Leu Ser Asn Gly Lys Tyr Lys Ser Ile Leu His Arg
    275             280             285
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Gly Leu Val Asn Lys Glu Lys Val Arg Ile Ser Trp Ala Val Phe Cys
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Glu Pro Pro Lys Asp Lys Ile Val Leu Lys Pro Leu Pro Glu Met Val
305   310   315   320

Ser Val Glu Ser Pro Ala Lys Phe Pro Pro Arg Thr Phe Ala Gln His
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Lys Asn Asp
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<213> Arabidopsis thaliana

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Ser Ile Pro Lys Glu Tyr Ile Arg Pro Lys Glu Glu Leu Glu Ser Ile
            20   25   30

Asn Asp Val Phe Leu Glu Glu Lys Lys Glu Asp Gly Pro Gln Val Pro
        35   40   45

Thr Ile Asp Leu Lys Asn Ile Glu Ser Asp Asp Glu Lys Ile Arg Glu
    50   55   60

Asn Cys Ile Glu Glu Leu Lys Lys Ala Ser Leu Asp Trp Gly Val Met
65   70   75   80

His Leu Ile Asn His Gly Ile Pro Ala Asp Leu Met Glu Arg Val Lys
            85   90   95

Lys Ala Gly Glu Glu Phe Phe Ser Leu Ser Val Glu Glu Lys Glu Lys
            100   105   110

Tyr Ala Asn Asp Gln Ala Thr Gly Lys Ile Gln Gly Tyr Gly Ser Lys
        115   120   125

Leu Ala Asn Asn Ala Ser Gly Gln Leu Glu Trp Glu Asp Tyr Phe Phe
    130   135   140

His Leu Ala Tyr Pro Glu Glu Lys Arg Asp Leu Ser Ile Trp Pro Lys
145   150   155   160

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```
Thr Pro Ser Asp Tyr Ile Glu Ala Thr Ser Glu Tyr Ala Lys Cys Leu
                165             170             175
```

```
Arg Leu Leu Ala Thr Lys Val Phe Lys Ala Leu Ser Val Gly Leu Gly
            180             185             190
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```
Leu Glu Pro Asp Arg Leu Glu Lys Glu Val Gly Gly Leu Glu Glu Leu
        195             200             205
```

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Leu Leu Gln Met Lys Ile Asn Tyr Tyr Pro Lys Cys Pro Gln Pro Glu
    210             215             220
```

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Leu Ala Leu Gly Val Glu Ala His Thr Asp Val Ser Ala Leu Thr Phe
225             230             235             240
```

```
Ile Leu His Asn Met Val Pro Gly Leu Gln Leu Phe Tyr Glu Gly Lys
                245             250             255
```

```
Trp Val Thr Ala Lys Cys Val Pro Asp Ser Ile Val Met His Ile Gly
            260             265             270
```

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Asp Thr Leu Glu Ile Leu Ser Asn Gly Lys Tyr Lys Ser Ile Leu His
        275             280             285
```

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Arg Gly Leu Val Asn Lys Glu Lys Val Arg Ile Ser Trp Ala Val Phe
    290             295             300
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Cys Glu Pro Pro Lys Asp Lys Ile Val Leu Lys Pro Leu Pro Glu Met
305             310             315             320
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Val Ser Val Glu Ser Pro Ala Lys Phe Pro Pro Arg Thr Phe Ala Gln
            325             330             335
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His Ile Glu His Lys Leu Phe Gly Lys Glu Gln Glu Glu Leu Val Ser
        340             345             350
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Glu Lys Asn Asp
        355
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<212>   PRT
<213>   Arabidopsis thaliana
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<400>   126
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1               5               10              15
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Ser Ile Pro Lys Glu Tyr Ile Arg Pro Lys Glu Glu Leu Glu Ser Ile
            20              25              30
```

```
Asn Asp Val Phe Leu Glu Glu Lys Lys Glu Asp Gly Pro Gln Val Pro
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                    35   40   45

Thr Ile Asp Leu Lys Asn Ile Glu Ser Asp Asp Glu Lys Ile Arg Glu
    50   55   60

Asn Cys Ile Glu Glu Leu Lys Lys Ala Ser Leu Asp Trp Gly Val Met
65   70   75   80

His Leu Ile Asn His Gly Ile Pro Ala Asp Leu Met Glu Arg Val Lys
                85   90   95

Lys Ala Gly Glu Glu Phe Phe Ser Leu Ser Val Glu Glu Lys Glu Lys
            100   105   110

Tyr Ala Asn Asp Gln Ala Thr Gly Lys Ile Gln Gly Tyr Gly Ser Lys
            115   120   125

Leu Ala Asn Asn Ala Ser Gly Gln Leu Glu Trp Glu Asp Tyr Phe Phe
    130   135   140

His Leu Ala Tyr Ser Glu Glu Lys Arg Asp Leu Ser Ile Trp Pro Lys
145   150   155   160

Thr Pro Ser Asp Tyr Ile Glu Ala Thr Ser Glu Tyr Ala Lys Cys Leu
                165   170   175

Arg Leu Leu Ala Thr Lys Val Phe Lys Ala Leu Ser Val Gly Leu Gly
            180   185   190

Leu Glu Pro Asp Arg Leu Glu Lys Glu Val Gly Gly Leu Glu Glu Leu
            195   200   205

Leu Leu Gln Met Lys Ile Asn Tyr Tyr Pro Lys Cys Pro Gln Pro Glu
    210   215   220

Leu Ala Leu Gly Val Glu Ala His Thr Asp Val Ser Ala Leu Thr Phe
225   230   235   240

Ile Leu His Asn Met Val Pro Gly Leu Gln Leu Phe Tyr Glu Gly Lys
                245   250   255

Trp Val Thr Ala Lys Cys Val Pro Asp Ser Ile Val Met His Ile Gly
            260   265   270

Asp Thr Leu Glu Ile Leu Ser Asn Gly Lys Tyr Lys Ser Ile Leu His
        275   280   285

Arg Gly Leu Val Asn Lys Glu Lys Val Arg Ile Ser Trp Ala Val Phe
    290   295   300

Cys Glu Pro Pro Lys Asp Lys Ile Val Leu Lys Pro Leu Pro Glu Met

305   310   315   320

Val Ser Val Glu Ser Pro Ala Lys Phe Pro Pro Arg Thr Phe Ala Gln
            325   330   335

His Ile Glu His Lys Leu Phe Gly Lys Glu Gln Glu Glu Leu Val Ser
        340   345   350

Glu Lys Asn Asp
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<213> Arabidopsis thaliana

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<213> Hordeum vulgare

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<212> DNA
<213> Brassica napus

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Page 81

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caactacacg cttattttac ttcaccctgt ttgttacttt agtcactaga ttaaactttta     540
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cgggataccg aatgaagtga taagtgagtt gcagagagta gggaaggagt tctttgagct   180

gccgcaggag gagaaggagg tttacgcaac ggtcccggat tcggggagct ttgaaggtta   240
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cgaggagtgc aacaaggtgt tcctggccat cagcgagcgc aagctcatcg acccgatgct     960

cgagtgcctc aaggagtgga acggcgagcc cctgcccatc tgctgatcga accagtccac    1020

ccgcgaacgc gacaagatcc aggaagagac gatacgtgca ccgaaataag aaagggagga   1080

attcaggatc ctgaaggctt ctcgtacgct catcagcaga ttacgttgtt tctccgtccg   1140

tgtttttttt ttcctttttg agcttgctgt atttatccgt gttgtaatcg tgtgagattg   1200

ctgctgcaat gccgtggcgc ctgcagcgtt catggccttg gctggcagct ttctgattcc   1260

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Met Val Met Ala Gly Ala Ser Ser Leu Asp Glu Ile Arg Gln Ala Gln
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                20   25   30

Glu Asn His Val Leu Gln Ala Glu Tyr Pro Asp Tyr Tyr Phe Arg Ile
            35   40   45

Thr Asn Ser Glu His Met Thr Asp Leu Lys Glu Lys Phe Lys Arg Met
        50   55   60

Cys Asp Lys Ser Thr Ile Arg Lys Arg His Met His Leu Thr Glu Glu
65   70   75   80

Phe Leu Lys Glu Asn Pro His Met Cys Ala Tyr Met Ala Pro Ser Leu
                85   90   95

Asp Thr Arg Gln Asp Ile Val Val Val Glu Val Pro Lys Leu Gly Lys
                100   105   110

Glu Ala Ala Val Lys Ala Ile Lys Glu Trp Gly Gln Pro Lys Ser Lys
            115   120   125

Ile Thr His Val Val Phe Cys Thr Thr Ser Gly Val Asp Met Pro Gly
        130   135   140

Ala Asp Tyr Gln Leu Thr Lys Leu Leu Gly Leu Arg Pro Ser Val Lys
145   150   155   160

Arg Leu Met Met Tyr Gln Gln Gly Cys Phe Ala Gly Gly Thr Val Leu
                165   170   175

Arg Ile Ala Lys Asp Leu Ala Glu Asn Asn Arg Gly Ala Arg Val Leu
            180   185   190

Val Val Cys Ser Glu Ile Thr Ala Val Thr Phe Arg Gly Pro Ser Asp
        195   200   205

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```
Thr His Leu Asp Ser Leu Val Gly Gln Ala Leu Phe Ser Asp Gly Ala
    210             215             220
```

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Ala Ala Leu Ile Val Gly Ser Asp Pro Asp Thr Ser Val Gly Glu Lys
225             230             235             240
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Pro Ile Phe Glu Met Val Ser Ala Ala Gln Thr Ile Leu Pro Asp Ser
                245             250             255
```

```
Asp Gly Ala Ile Asp Gly His Leu Arg Glu Val Gly Leu Thr Phe His
            260             265             270
```

```
Leu Leu Lys Asp Val Pro Gly Leu Ile Ser Lys Asn Ile Val Lys Ser
        275             280             285
```

```
Leu Asp Glu Ala Phe Lys Pro Leu Gly Ile Ser Asp Trp Asn Ser Leu
    290             295             300
```

```
Phe Trp Ile Ala His Pro Gly Gly Pro Ala Ile Leu Asp Gln Val Glu
305             310             315             320
```

```
Ile Lys Leu Gly Leu Lys Glu Glu Lys Met Arg Ala Thr Arg His Val
            325             330             335
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```
Leu Ser Glu Tyr Gly Asn Met Ser Ser Ala Cys Val Leu Phe Ile Leu
            340             345             350
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```
Asp Glu Met Arg Arg Lys Ser Ala Lys Asp Gly Val Ala Thr Thr Gly
            355             360             365
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Glu Gly Leu Glu Trp Gly Val Leu Phe Gly Phe Gly Pro Gly Leu Thr
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Val Glu Thr Val Val Leu His Ser Val Pro Leu
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